

Application No.: 09/892,543
Reply to Office Action of: May 4, 2004

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims

1. (Previously Presented) A method for producing an ethylene-vinyl acetate copolymer, comprising:

copolymerizing ethylene and vinyl acetate in an alcohol-based solvent, so as to form a solution containing said ethylene-vinyl acetate copolymer; and

recovering unreacted vinyl acetate from said solution after copolymerizing;

wherein said solution is introduced into a recovery column through an upper portion thereof, a vapor of an alcohol-based solvent is introduced into said recovery column through a lower portion thereof, a solution comprising ethylene-vinyl acetate copolymer is taken out of said recovery column through a lower portion thereof, and unreacted vinyl acetate in the solution is taken out of said recovery column with the vapor of the alcohol-based solvent through an upper portion thereof;

wherein said alcohol-based solvent, the vapor of which is introduced into said recovery column, is deoxidized in advance of being introduced into said recovery column and an oxygen concentration in said alcohol-based solvent is not more than 60 ppm.

2. (Previously Presented) The method according to claim 1, wherein said oxygen concentration is not more than 30 ppm.

3. (Previously Presented) The method according to claim 1, wherein an oxygen concentration in said alcohol-based solvent for copolymerizing is not more than 15 ppm.

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4. (Previously Presented) A method for producing a saponified ethylene-vinyl acetate copolymer, comprising:

copolymerizing ethylene and vinyl acetate in an alcohol-based solvent to obtain a solution containing an ethylene-vinyl acetate copolymer;

recovering unreacted vinyl acetate from said solution after copolymerizing; and

saponifying said ethylene-vinyl acetate copolymer;

wherein said solution is introduced into a recovery column through an upper portion thereof, a vapor of an alcohol-based solvent is introduced into said recovery column through a lower portion thereof, a solution comprising said ethylene-vinyl acetate copolymer is taken out of the recovery column through a lower portion thereof, and unreacted vinyl acetate in the solution is taken out of said recovery column with the vapor of the alcohol based solvent through an upper portion thereof,

wherein said alcohol-based solvent, the vapor of which is introduced into said recovery column, is deoxidized in advance of being introduced into said recovery column and an oxygen concentration in said alcohol-based solvent is not more than 60 ppm.

5. (Previously Presented) The method according to claim 4, wherein a saponification degree of said saponified ethylene-vinyl acetate copolymer is at least 90 mol %.

6. (Previously Presented) The method according to claim 4, wherein said oxygen concentration is not more than 30 ppm.

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7. (Previously Presented) The method according to claim 4, wherein an oxygen concentration in said alcohol-based solvent for copolymerizing is not more than 15 ppm.
8. (Previously Presented) The method according to claim 1, wherein said alcohol-based solvent is deoxidized in advance of said copolymerizing.
9. (Previously Presented) The method according to claim 4, wherein said alcohol-based solvent is deoxidized in advance of said copolymerizing.
10. (Previously Presented) The method according to claim 1, wherein said alcohol-based solvent is deoxidized in advance of said recovering.
11. (Previously Presented) The method according to claim 4, wherein said alcohol-based solvent is deoxidized in advance of said recovering.
12. (Previously Presented) The method according to claim 1, wherein said alcohol-based solvent comprises a member selected from the group consisting of ~~an~~ alcohols having 1 to 4 carbon atoms and mixtures thereof. Λ
13. (Previously Presented) The method according to claim 4, wherein said

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alcohol-based solvent comprises a member selected from the group consisting of ~~an~~ alcohols ^Λ having 1 to 4 carbon atoms and mixtures thereof.

14. (Previously Presented) The method according to claim 1, wherein said ethylene-vinyl acetate copolymer further comprises, in copolymerized form, a comonomer selected from the group consisting of α -olefins, unsaturated acids, salts of unsaturated acids, anhydrides of unsaturated acids, monoalkyl esters of unsaturated acids and dialkyl esters of unsaturated acids, ethylenically unsaturated nitriles, ethylenically unsaturated amides, olefin sulfonic acids, salts of olefin sulfonic acids, alkyl vinyl ethers, vinyl ketone, N-vinylpyrrolidone, vinyl chloride and vinylidene chloride.

15. (Previously Presented) The method according to claim 4, wherein said ethylene-vinyl acetate copolymer further comprises, in copolymerized form, a comonomer selected from the group consisting of α -olefins, unsaturated acids, salts of unsaturated acids, anhydrides of unsaturated acids, monoalkyl esters of unsaturated acids and dialkyl esters of unsaturated acids, ethylenically unsaturated nitriles, ethylenically unsaturated amides, olefin sulfonic acids, salts of olefin sulfonic acids, alkyl vinyl ethers, vinyl ketone, N-vinylpyrrolidone, vinyl chloride and vinylidene chloride.

16. (Previously Presented) The method according to claim 1, wherein an ethylene content of said ethylene-vinyl acetate copolymer is at least 20 mol% but not more than 70 mol%.

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17. (Previously Presented) The method according to claim 4, wherein an ethylene content of said ethylene-vinyl acetate copolymer is at least 20 mol% but not more than 70 mol%.

18. (Previously Presented) The method according to claim 4, wherein a melt index of said saponified ethylene-vinyl acetate copolymer is from 0.1 to 200¹⁰g/min, as measured at 190°C under a load of 2160g.
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19. (Canceled)

20. (Canceled)